

- 1 -

SEQUENCE LISTING

<110> Wang, Hwa-Chain R.

<120> ANTIBODY COMPOSITIONS SPECIFIC FOR p33QIK AND p63KRS1
POLYPEPTIDES AND USES THEREOF

<130> 4350.000800

<140> Unknown

<141> 2001-03-30

<150> 60/193,550

<151> 2000-03-31

<160> 76

<170> PatentIn Ver. 2.1

<210> 1

<211> 1476

<212> DNA

<213> Homo sapiens

<400> 1

```
atggagcagc cgccggcgcc taagagtaaa ctaaaaaagc tgagtgaaga cagtttgact 60
aagcagcctg aagaagtttt tgatgtatta gagaagcttg gagaaggggc ttatggaagt 120
gtatttaaag caatacacia ggaatccggt caagttgtcg caattaaaca agtacctgtt 180
gaatcagatc ttcaggaaat aatcaaagaa atttccataa tgcagcaatg tgacagccca 240
tatgttgtaa agtactatgg cagttatttt aagaatacag acctctggat tgttatggag 300
tactgtggcg ctggctctgt ctacagacata attagattac gaaacaagac attaatagaa 360
gatgaaattg caaccattct taaatctaca ttgaaaggac tagaatattt gcactttatg 420
agaaaaatac acagagatat aaaagctgga aatattctcc tcaatacaga aggacatgca 480
aaattggcag attttggagt ggctggtcag ttaacagata caatggcaaa acgcaatact 540
gtaataggaa ctccattttg gatggctcct gaggtgatgc aagaaatagg ctataactgt 600
gtggccgaca tctggctcct tggcattact tctatagaaa tggctgaagg aaaacctcct 660
tatgctgata tacatccaat gagggctatt tttatgatgc ccacaaatcc accaccaaca 720
ttcagaaagc cagaactttg gtccgatgat ttcaccgatt ttgttaaaaa gtgtttggtg 780
aagaatcctg agcagagagc tactgcaaca caacttttac agcatccttt tatcaagaat 840
gccaaacctg tatcaatatt aagagacctg atcacagaag ctatggagat caaagctaaa 900
agacatgacg aacagcaacg agaattggaa gaggaagaag aaaattcgga tgaagatgag 960
ctggattccc acaccatggt gaagactagt gtgggagagt gtggcaccat gcgggccaca 1020
agcacgatga gtgaaggggc ccagaccatg attgaacata atagcacgat gttggaatcc 1080
gacttgggga ccatggtgat aaacagtga gatgaggaag aagaagatgg aactatgaaa 1140
agaaatgcaa cctcaccaca agtacaaga ccatctttca tggactactt tgataagcaa 1200
gacttcaaga ataagagtca cgaaaactgt aatcagaaca tgcatagaacc cttccctatg 1260
tccaaaaacg tttttcctga taactggaaa gttcctcaag atggagactt tgactttttg 1320
aaaaatctaa gtttagaaga actacagatg cggttaaaag cactggaccc catgatggaa 1380
cgggagatag aagaacttcg tcagagatac actgcgaaaa gacagcccat tctggatgag 1440
atggatgcaa agaaaagaag gcagcaaaac ttttga 1476
```

<210> 2

<211> 491

<212> PRT

<213> Homo sapiens

- 2 -

<400> 2

Met Glu Gln Pro Pro Ala Pro Lys Ser Lys Leu Lys Lys Leu Ser Glu
1 5 10 15

Asp Ser Leu Thr Lys Gln Pro Glu Glu Val Phe Asp Val Leu Glu Lys
20 25 30

Leu Gly Glu Gly Ser Tyr Gly Ser Val Phe Lys Ala Ile His Lys Glu
35 40 45

Ser Gly Gln Val Val Ala Ile Lys Gln Val Pro Val Glu Ser Asp Leu
50 55 60

Gln Glu Ile Ile Lys Glu Ile Ser Ile Met Gln Gln Cys Asp Ser Pro
65 70 75 80

Tyr Val Val Lys Tyr Tyr Gly Ser Tyr Phe Lys Asn Thr Asp Leu Trp
85 90 95

Ile Val Met Glu Tyr Cys Gly Ala Gly Ser Val Ser Asp Ile Ile Arg
100 105 110

Leu Arg Asn Lys Thr Leu Ile Glu Asp Glu Ile Ala Thr Ile Leu Lys
115 120 125

Ser Thr Leu Lys Gly Leu Glu Tyr Leu His Phe Met Arg Lys Ile His
130 135 140

Arg Asp Ile Lys Ala Gly Asn Ile Leu Leu Asn Thr Glu Gly His Ala
145 150 155 160

Lys Leu Ala Asp Phe Gly Val Ala Gly Gln Leu Thr Asp Thr Met Ala
165 170 175

Lys Arg Asn Thr Val Ile Gly Thr Pro Phe Trp Met Ala Pro Glu Val
180 185 190

Ile Gln Glu Ile Gly Tyr Asn Cys Val Ala Asp Ile Trp Ser Leu Gly
195 200 205

Ile Thr Ser Ile Glu Met Ala Glu Gly Lys Pro Pro Tyr Ala Asp Ile
210 215 220

His Pro Met Arg Ala Ile Phe Met Ile Pro Thr Asn Pro Pro Pro Thr
225 230 235 240

Phe Arg Lys Pro Glu Leu Trp Ser Asp Asp Phe Thr Asp Phe Val Lys
245 250 255

Lys Cys Leu Val Lys Asn Pro Glu Gln Arg Ala Thr Ala Thr Gln Leu
260 265 270

Leu Gln His Pro Phe Ile Lys Asn Ala Lys Pro Val Ser Ile Leu Arg

- 3 -

275	280	285
Asp Leu Ile Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu 290 295 300		
Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu 305 310 315 320		
Leu Asp Ser His Thr Met Val Lys Thr Ser Val Gly Glu Cys Gly Thr 325 330 335		
Met Arg Ala Thr Ser Thr Met Ser Glu Gly Ala Gln Thr Met Ile Glu 340 345 350		
His Asn Ser Thr Met Leu Glu Ser Asp Leu Gly Thr Met Val Ile Asn 355 360 365		
Ser Glu Asp Glu Glu Glu Glu Asp Gly Thr Met Lys Arg Asn Ala Thr 370 375 380		
Ser Pro Gln Val Gln Arg Pro Ser Phe Met Asp Tyr Phe Asp Lys Gln 385 390 395 400		
Asp Phe Lys Asn Lys Ser His Glu Asn Cys Asn Gln Asn Met His Glu 405 410 415		
Pro Phe Pro Met Ser Lys Asn Val Phe Pro Asp Asn Trp Lys Val Pro 420 425 430		
Gln Asp Gly Asp Phe Asp Phe Leu Lys Asn Leu Ser Leu Glu Glu Leu 435 440 445		
Gln Met Arg Leu Lys Ala Leu Asp Pro Met Met Glu Arg Glu Ile Glu 450 455 460		
Glu Leu Arg Gln Arg Tyr Thr Ala Lys Arg Gln Pro Ile Leu Asp Ala 465 470 475 480		
Met Asp Ala Lys Lys Arg Arg Gln Gln Asn Phe 485 490		

<210> 3

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 3

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

- 4 -

<210> 4
<211> 14
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 4
Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
1 5 10

<210> 5
<211> 50
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 5
Pro Phe Ile Lys Asn Ala Lys Pro Val Ser Ile Leu Arg Asp Leu Ile
1 5 10 15

Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg
20 25 30

Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser
35 40 45

His Thr
50

<210> 6
<211> 49
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 6
Phe Ile Lys Asn Ala Lys Pro Val Ser Ile Leu Arg Asp Leu Ile Thr
1 5 10 15

Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu
20 25 30

Leu Glu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His
35 40 45

Thr

- 5 -

<210> 7
<211> 48
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 7
Ile Lys Asn Ala Lys Pro Val Ser Ile Leu Arg Asp Leu Ile Thr Glu
1 5 10 15
Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu
20 25 30
Glu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
35 40 45

<210> 8
<211> 47
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 8
Lys Asn Ala Lys Pro Val Ser Ile Leu Arg Asp Leu Ile Thr Glu Ala
1 5 10 15
Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu
20 25 30
Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
35 40 45

<210> 9
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 9
Asn Ala Lys Pro Val Ser Ile Leu Arg Asp Leu Ile Thr Glu Ala Met
1 5 10 15
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu

<400> 12
Pro Val Ser Ile Leu Arg Asp Leu Ile Thr Glu Ala Met Glu Ile Lys
1 5 10 15

- 7 -

Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu
20 25 30

Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
35 40

<210> 13
<211> 42
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 13
Val Ser Ile Leu Arg Asp Leu Ile Thr Glu Ala Met Glu Ile Lys Ala
1 5 10 15

Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn
20 25 30

Ser Asp Glu Asp Glu Leu Asp Ser His Thr
35 40

<210> 14
<211> 41
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 14
Ser Ile Leu Arg Asp Leu Ile Thr Glu Ala Met Glu Ile Lys Ala Lys
1 5 10 15

Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser
20 25 30

Asp Glu Asp Glu Leu Asp Ser His Thr
35 40

<210> 15
<211> 40
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 15

- 8 -

Ile Leu Arg Asp Leu Ile Thr Glu Ala Met Glu Ile Lys Ala Lys Arg
1 5 10 15

His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp
20 25 30

Glu Asp Glu Leu Asp Ser His Thr
35 40

<210> 16

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 16

Leu Arg Asp Leu Ile Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His
1 5 10 15

Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu
20 25 30

Asp Glu Leu Asp Ser His Thr
35

<210> 17

<211> 38

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 17

Arg Asp Leu Ile Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp
1 5 10 15

Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp
20 25 30

Glu Leu Asp Ser His Thr
35

<210> 18

<211> 37

<212> PRT

<213> Artificial Sequence

<220>

- 9 -

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 18

Asp Leu Ile Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu
1 5 10 15

Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu
20 25 30

Leu Asp Ser His Thr
35

<210> 19

<211> 36

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 19

Leu Ile Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln
1 5 10 15

Gln Arg Glu Leu Glu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu
20 25 30

Asp Ser His Thr
35

<210> 20

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 20

Ile Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln
1 5 10 15

Arg Glu Leu Glu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp
20 25 30

Ser His Thr
35

<210> 21

<211> 34

<212> PRT

<213> Artificial Sequence

- 10 -

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 21

Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg
1 5 10 15

Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser
20 25 30

His Thr

<210> 22

<211> 33

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 22

Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu
1 5 10 15

Leu Glu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His
20 25 30

Thr

<210> 23

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 23

Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu
1 5 10 15

Glu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
20 25 30

<210> 24

<211> 31

<212> PRT

- 11 -

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 24

Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu
1 5 10 15

Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
20 25 30

<210> 25

<211> 29

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 25

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His
20 25

<210> 26

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 26

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser
20 25

<210> 27

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 27

- 12 -

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp
20 25

<210> 28
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 28
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu
20 25

<210> 29
<211> 25
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 29
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu
20 25

<210> 30
<211> 24
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 30
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp
20

<210> 31

- 13 -

<211> 23
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 31
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu
20

<210> 32
<211> 22
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 32
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp
20

<210> 33
<211> 21
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 33
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser
20

<210> 34
<211> 20
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

- 14 -

<400> 34
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn
20

<210> 35
<211> 19
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 35
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu

<210> 36
<211> 18
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 36
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu

<210> 37
<211> 29
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 37
Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu
1 5 10 15

Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
20 25

- 15 -

<210> 38
<211> 28
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 38
Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu
1 5 10 15

Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
20 25

<210> 39
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 39
Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu
1 5 10 15

Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
20 25

<210> 40
<211> 26
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 40
Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn
1 5 10 15

Ser Asp Glu Asp Glu Leu Asp Ser His Thr
20 25

<210> 41
<211> 25
<212> PRT
<213> Artificial Sequence

<220>

- 16 -

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 41

Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser
1 5 10 15

Asp Glu Asp Glu Leu Asp Ser His Thr
20 25

<210> 42

<211> 24

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 42

His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp
1 5 10 15

Glu Asp Glu Leu Asp Ser His Thr
20

<210> 43

<211> 23

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 43

Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu
1 5 10 15

Asp Glu Leu Asp Ser His Thr
20

<210> 44

<211> 22

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 44

Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp
1 5 10 15

Glu Leu Asp Ser His Thr
20

- 17 -

<210> 45
<211> 21
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 45
Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu
1 5 10 15
Leu Asp Ser His Thr
20

<210> 46
<211> 20
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 46
Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu
1 5 10 15
Asp Ser His Thr
20

<210> 47
<211> 19
<212> PRT
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 47
Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp
1 5 10 15
Ser His Thr

<210> 48
<211> 18
<212> PRT
<213> Artificial Sequence

- 18 -

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 48

Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser
1 5 10 15

His Thr

<210> 49

<211> 17

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 49

Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His
1 5 10 15

Thr

<210> 50

<211> 16

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 50

Glu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
1 5 10 15

~~<210> 51~~

~~<211> 34~~

~~<212> PRT~~

~~<213> Artificial Sequence~~

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 51

Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu
1 5 10 15

Glu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr
20 25 30

Met Val

- 19 -

<210> 52
<211> 38
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 52
Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg
1 5 10 15
Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser
20 25 30
His Thr Met Val Lys Thr
35

<210> 53
<211> 42
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 53
Leu Ile Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp Glu Gln
1 5 10 15
Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu
20 25 30
Asp Ser His Thr Met Val Lys Thr Ser Val
35 40

<210> 54
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 54
Arg Asp Leu Ile Thr Glu Ala Met Glu Ile Lys Ala Lys Arg His Asp
1 5 10 15
Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp

- 20 -

20 25 30
Glu Leu Asp Ser His Thr Met Val Lys Thr Ser Val Gly Glu
35 40 45

<210> 55
<211> 50
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 55
Ile Leu Arg Asp Leu Ile Thr Glu Ala Met Glu Ile Lys Ala Lys Arg
1 5 10 15

His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp
20 25 30

Glu Asp Glu Leu Asp Ser His Thr Met Val Lys Thr Ser Val Gly Glu
35 40 45

Cys Gly
50

<210> 56
<211> 54
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 56
Val Ser Ile Leu Arg Asp Leu Ile Thr Glu Ala Met Glu Ile Lys Ala
1 5 10 15

~~Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn~~
~~20 25 30~~

Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val Lys Thr Ser Val
35 40 45

Gly Glu Cys Gly Thr Met
50

<210> 57
<211> 58
<212> PRT
<213> Artificial Sequence

- 21 -

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 57

Lys Pro Val Ser Ile Leu Arg Asp Leu Ile Thr Glu Ala Met Glu Ile
1 5 10 15

Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu
20 25 30

Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val Lys Thr
35 40 45

Ser Val Gly Glu Cys Gly Thr Met Arg Ala
50 55

<210> 58

<211> 31

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 58

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met
20 25 30

<210> 59

<211> 32

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 59

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30

<210> 60

<211> 33

<212> PRT

- 22 -

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 60

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30

Lys

<210> 61

<211> 34

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 61

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30

Lys Thr

<210> 62

<211> 35

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 62

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30

Lys Thr Ser
35

<210> 63

<211> 36

<212> PRT

<213> Artificial Sequence

- 23 -

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 63

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30

Lys Thr Ser Val
35

<210> 64

<211> 37

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 64

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30

Lys Thr Ser Val Gly
35

<210> 65

<211> 38

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 65

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30

Lys Thr Ser Val Gly Glu
35

<210> 66

<211> 39

<212> PRT

<213> Artificial Sequence

- 24 -

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 66

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30

Lys Thr Ser Val Gly Glu Cys
35

<210> 67

<211> 40

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 67

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30

Lys Thr Ser Val Gly Glu Cys Gly
35 40

<210> 68

<211> 41

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 68

Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15

Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30

Lys Thr Ser Val Gly Glu Cys Gly Thr
35 40

<210> 69

- 25 -

<211> 42
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 69
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15
Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30
Lys Thr Ser Val Gly Glu Cys Gly Thr Met
35 40

<210> 70
<211> 43
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 70
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15
Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30
Lys Thr Ser Val Gly Glu Cys Gly Thr Met Arg
35 40

<210> 71
<211> 44
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 71
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15
Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30
Lys Thr Ser Val Gly Glu Cys Gly Thr Met Arg Ala
35 40

- 26 -

<210> 72
<211> 45
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 72
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15
Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30
Lys Thr Ser Val Gly Glu Cys Gly Thr Met Arg Ala Thr
35 40 45

<210> 73
<211> 46
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 73
Glu Ile Lys Ala Lys Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu
1 5 10 15
Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met Val
20 25 30
Lys Thr Ser Val Gly Glu Cys Gly Thr Met Arg Ala Thr Ser
35 40 45

<210> 74
<211> 30
<212> PRT
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 74
Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu Asp Ser His Thr Met
1 5 10 15
Val Lys Thr Ser Val Gly Glu Cys Gly Thr Met Arg Ala Thr
20 25 30

<210> 75
<211> 30

- 27 -

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 75

Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser Asp Glu Asp Glu Leu
1 5 10 15

Asp Ser His Thr Met Val Lys Thr Ser Val Gly Glu Cys Gly
20 25 30

<210> 76

<211> 30

<212> PRT

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: SYNTHETIC PEPTIDE

<400> 76

Arg His Asp Glu Gln Gln Arg Glu Leu Glu Glu Glu Glu Asn Ser
1 5 10 15

Asp Glu Asp Glu Leu Asp Ser His Thr Met Val Lys Thr Ser
20 25 30